RECORDS OF THE PAST

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SEPTEMBER, 1905

EGYPTIAN ANTIQUITIES IN THE FREE MUSEUM OF SCIENCE AND ART OF THE UNIVERSITY OF PENNSYLVANIA*

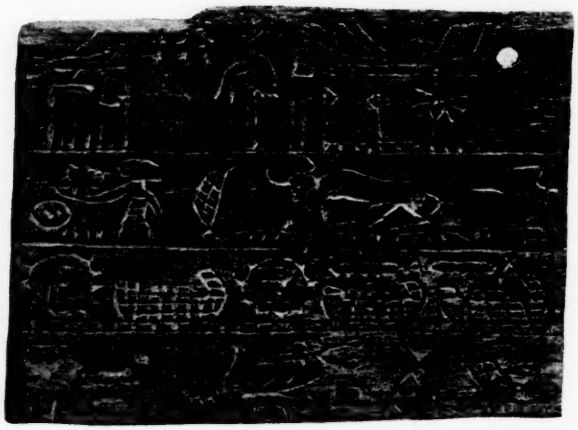
THIS collection of Egyptian antiquities, while not to be compared with the great collections in the museums of Europe, is unsurpassed on this side of the Atlantic, except it be by the rapidly growing collection of the University of California. The purchases by the museum from time to time, the rare and valuable assignments made to it in the distributions by the Egyptian Exploration Fund from the researches of Petrie, Quibell and others, and the large gifts and loans by friends of the museum have brought together a collection of unusual interest to the general public, and that will well repay careful study by the Egyptologist.

I will not attempt anything like a complete account of the contents of this part of the museum, but only bring out in photograph and description a few of the choicest relics in the collection, taking care also to illustrate in some good measure the different sections, as well as the different ages of Egyptian antiquity represented therein. Perhaps to the casual observer, and scarcely less to the technical student, the most interesting object here is this little ebony tablet inscribed with very ancient hieroglyphic characters (Fig. 1). It is known as the Mena tablet of ebony, is about 3½ in. by 4 in. in dimensions, broken

*Prepared by kind permission of the museum authorities.

BRONZE STATUES OF EGYPTIAN GODS [FIG. 10]

into two pieces, and is one of the oldest specimens of wood-carving in the world, and was at the time of its discovery, and perhaps is still to this day, the oldest continuous line of Egyptian hieroglyphics yet found. It is largely picture writing, with very little of grammatical forms, and, although not all decipherable as yet, it is very evident that it is really writing and not mere illustrations. The upper right-hand corner, reading to the left, shows the name of " Aha," the Horus name of Mena, " son of Amiut " (" mes Amiut," where a part of the tablet is broken away). Then follows to the left the name of the goddess Neit, with what is believed to be a shrine and temenos and two sacred boats. The second line begins at the right with a scene of offerings, then a bull running into a net, then a stork or ibis apparently on a shrine. The third and fourth lines have boats and some words that have been interpreted as a name of the capital of the Fayoum and the old canal, Bahr Yusuf.

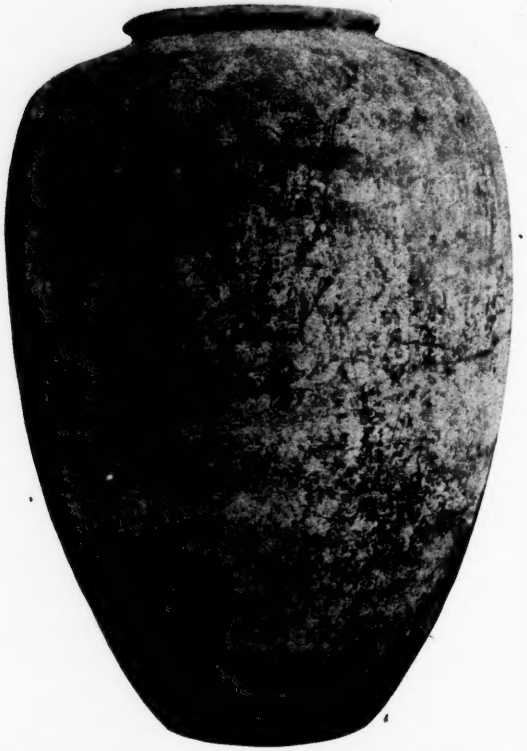


MENA TABLET [FIG. 1]

This stela (Fig. 2) is of the last king of the I Dynasty, whose Horus name, as here, was "Qa," and whose personal name was discovered by Petrie to be " Sen." Somebody hyphenated his name, and so he has come to be known as Qa-Sen. The stela reminds one of a good, plain, old-fashioned tombstone in a country graveyard. In truth, that is just what it was—in an Egyptian graveyard. It is of black quartzite, and two such were found. The other one, the more perfect of the two, is in Ghiza Museum, at Cairo. This one has had to be much restored, but the upper part having the name of the king, the Horus name indicated by the hawk above, is very clear. What a commentary on worldly greatness it is that almost all that is known of this king is his name on a tombstone.

The little fragment of burnt ivory (Fig. 3) is from the tomb of King Den at Abydos. It has been the subject of much ingenious and

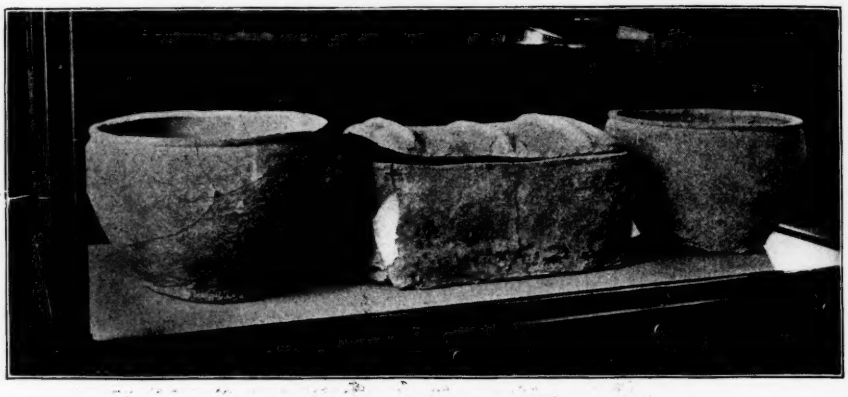
STELA OF QA-SEN [FIG. 2]



ALABASTER VASE OF KHA-SEKHEM [FIG. 4]

curious speculation. The Berlin school of Egyptologists, which insists upon certain rather set rules of grammar and of writing, usually assumes such tablets to be untranslatable, while the older school of Egyptologists, which finds much of the rebus style of writing on tablets and charms, attempts to assign some meaning to these hieroglyphics, but with indifferent success. The tablet has been translated in part, "The great chiefs come to the tomb of Setui."

The great alabaster vase (Fig. 4) of King Kha-Sekhem, the first king of the II Dynasty, is of special interest as showing something of the great advancement of the sculptor's art at that early age. Some of the king's titles on the side of the vase, near the top, but scarcely visible in the photograph, are not art work, but writing; that is, they are chiseled or scratched in a running hand, as painters and sculptors are wont to scrawl their own names on the products of their art to-day. The form and workmanship of the vase speak for themselves.



EGYPTIAN BURIAL CASES [FIG. 5]

The collection of early burial cases (Fig. 5) is a most interesting one. It was at first thought by Prof. Petrie that these cases indicated purely prehistoric burials, but later excavations by the same discoverer brought to light some similar burials among the retainers and domestics of King Khasekhemui of the II Dynasty, showing that, though this may have been used as a mode of burial in prehistoric times, it was not confined to that age, but was a burial custom among certain classes in dynastic time. It may be a method of prehistoric people lingering on, as Indian burials in America to-day, or it may be a method of burial introduced into Egypt by foreigners in Egypt, as Chinese burials among us, which, though rare, do occur, or it may be—and perhaps this is the most probable—that this was one of the methods of disposing of the vast multitudes of Egypts dead poor in all ages of the period of Egyptian history.

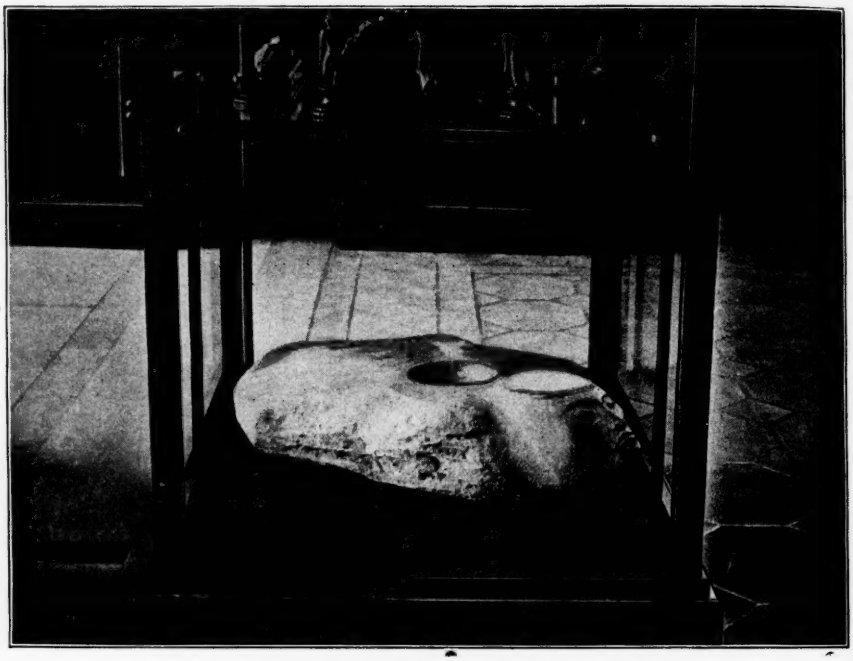
Another object (Fig. 6, in the lower part of the glass case) gives a whole chapter in ancient Egyptian morals and civilization, as well as

[FIG. 8]

[FIG. 9]

PORTRAIT PANELS FROM COFFINS OF THE EARLY CHRISTIAN ERA

architecture, and is the most important relic in the whole collection. The rude, shapeless mass of stone is an ancient door-socket. The conical depression in the center was for the foot of the post on which the door turned. A second and more careful look at the stone brings out the horrible spectacle of a captive enemy trussed like a duck and crushed under the door-post, as though to symbolize the cruel idea that the owner of the house lived his daily life over the ruined and crushed and prostrate form of his enemy, and that the stability and safety and comfort of the home was founded upon the most ruthless treatment of every one who dared to rise up in the way. There seems something in



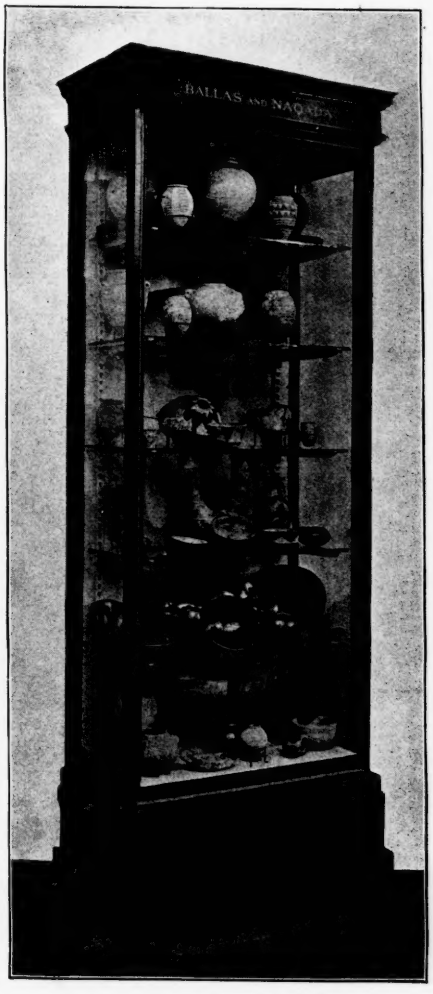
DOOR SOCKET [FIG. 6]

the face of this poor crushed wretch that gives a visage of horror to all the face of the civilization of that time. Roman emperors might exhibit their enemies chained to their chariot wheels to grace a triumphal procession, but the mind that conceived a bound and crushed enemy as a socket for his door-post would seem to be many degrees deeper in infamous cruelty.

The bowls and dishes of Fig. 7 represent a choice collection of painted pottery found at Bellas and Nagada in 1894-95 by the Egyptian Exploration Fund. This pottery is specially valuable as showing foreign, more particularly Greek, or at least Mediterranean, influence. Pure Egyptian pottery has but little ornamentation other than a little

in the molding or in the dark coloring given to some of it in the firing. But here is a great variety of decoration, and while in no case can it be said to rise to the level of fine art decoration, yet many of the patterns have a beautiful effect. The designs are geometrical. In addition to the decoration, some rare shapes are introduced, such as the boat on the bottom shelf and the nameless pattern on the third shelf from the bottom.

The portrait panels (Figs. 8 and 9) from coffins are of a later period in Egyptian history, early in the Christian era. These paintings are Greek art, representing most probably Greeks in Egypt. They belong to a period when, though Greek political power was gone forever, Greek influence in the life of the people was yet very strong. The custom of putting the portrait of the deceased on the coffin in this period, as in the days of the new empire, may have been only a variety of art display, but more probably had some religious significance, as the guidance of the Ka, on its return from its wanderings, that it might make no mistake in seeking to enter again the resting-place of its former body. These pictures are evidently portraits.



PAINTED POTTERY [FIG. 7]

The collection of bronze statues of the gods in the museum, though not of course to be compared to the collections in the great museums abroad, is yet a very fine one. Only a few selections specially arranged for the camera can be shown here (Fig. 10).

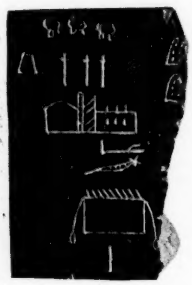
These selections that I have made, as I look over them, almost seem to institute an invidious comparison with the other valuable possessions of this part of the museum, a description of which time and space forbid. The large number of Egyptian flints, the fine hand-made pottery of the early period, the toilet articles and other small objects, the exquisite alabaster, granite and volcanic ash sculptures in

dishes, bowls and vases, the fine illustration of the mummifying and burial of the dead in various ages, and the very large and finely mounted collection of specimens of mummy cloth must be passed over with this mere mention.

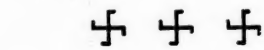
Every facility is given by the museum authorities to the casual visitor, and special opportunities to students upon application. This part of the museum has also its full share in the elaborate courses of lectures given to the large membership of the Archæological Society of the museum each year. In 1894 there was an extended course on "The Religion of Egypt," by the distinguished Egyptologist, Prof. Steindorf of Leipsic.

M. G. KYLE.

PHILADELPHIA, PA.



FRAGMENT OF BURNT IVORY [FIG. 3]



RELICS OF THE ATTIWANDARONS

THE Attiwandarons, or Neutrals, the *Kah-kwahs* of Seneca traditon, were the earliest historical inhabitants of western Ontario. They controlled both sides of the Niagara River and Lake Ontario as far as Burlington Bay, while their inland jurisdiction covered the central and southern tracts of the Hurontario Peninsula. In New York State their eastern limit seems to have been the Genesee Valley, and their southern limit was, apparently, Cattaraugus Creek.

Through the operations of the agriculturist many of their village sites are now exposed to view. These sites often occupy from 2 to 10, and sometimes more, acres of ground. Their presence is indicated by large, circular or oblong ash beds. There was no definite arrangement of the houses or cabins which presumably once stood on these ash beds, for they are scattered here and there over the whole area occupied by the village.

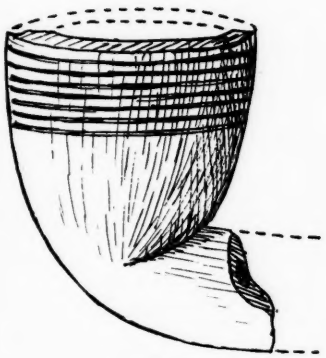


Fig. 4.

Fig. 3.

Fig. 7.

Fig. 2.

Fig. 2

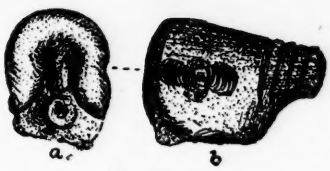


Fig. 5.

The first foot of soil in these ash beds is generally a dark vegetable mould mixed with charcoal, ashes and decayed organic matter, and below this is a stratum of ashes varying in thickness from a few inches to sometimes nearly a foot. This stratum lies on the undisturbed natural soil. Scattered through these remains of the old camp fires are the relics which will be briefly described below.

No attempt will be made to describe the relics of the later Neutrals —those who lived after the advent of the Europeans. These, in common with the Hurons of the Georgian Bay and Lake Simcoe districts and the Five Nations of New York State, used horn combs, perforated bone needles and horn harpoons—implements which have as yet not been reported from a prehistoric Neutral site. All the relics described in this article were found on prehistoric village sites in the counties of Oxford and Waterloo, which are both centrally located in the old Attiwandaron region.*

The most numerous relics are the fragments of pottery, nearly every village site yielding large quantities. Whole pots are very seldom found. It is possible, however, to reconstruct many from the fragments, and these are invariably of graceful form. Many have overhanging or projecting rims. The neck is also very often ornamented, and in some specimens this is continued down to the equator of the vessel. The decoration usually takes the form of straight or oblique lines interspersed with circular indentations. Sometimes a more elaborate pattern is attempted—such as the chevron or reticulate, and some were decorated by impressions made with the finger nail. Some appear to have had quadrangular rims. The writer has fragments of a rim which was octagonal. Many are provided with projecting lips, but none have lugs or handles. All the pots are round-bottomed. A fragment of a very small vessel is shown in Fig. 1 (actual size). It has a small, projecting lip, and is ornamented with oblique lines and round indentations. As was also reported of the pottery found at Hochelaga by Sir J. W. Dawson (*Fossil Men*), " many of the smaller pots are blackened by fire and are encrusted near the neck with a black paste, evidently the remains of the pottage of Indian cornmeal formerly cooked in them." The writer once found between the fragments of a pot a quantity of carbonized pieces of grass stems cut into short pieces, and quite a number of large land snails of the variety known as *Zonites fuliginosus*. Perhaps the animals in these shells were used as food. Carbonized grains of corn, cobs, and even portions of maize leaves are often found with the pottery.

The material that was used in making the pottery was clay, with an admixture of black mica flakes, which held the vessel together while in the process of drying.

The Attiwandarons appear to have been inveterate smokers, for numerous fragments of pipes are discovered. They are made of clay, and sometimes, but very seldom, of stone. A specimen of the " trum-

*These specimens are all, with the exception of Fig. 46, in the Provincial Museum, Toronto.

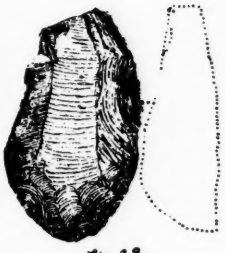


Fig. 12.

Fig. 18

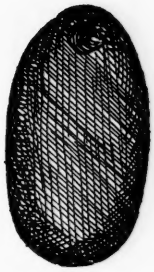


Fig. 19.

Fig. 14

Fig. 15.

Fig. 16.

Fig. 17.

Fig. 8.

Fig. 13.

Fig. 9.

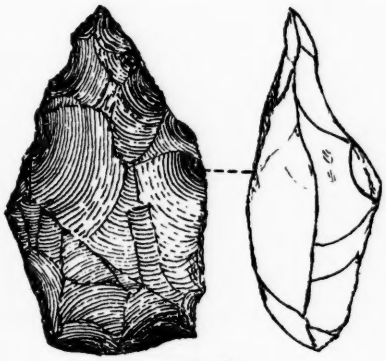


Fig. 11.

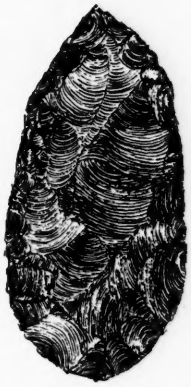
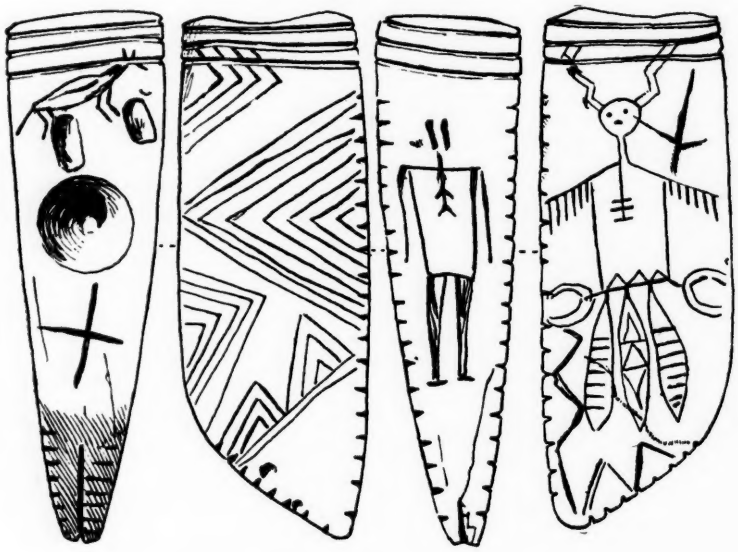
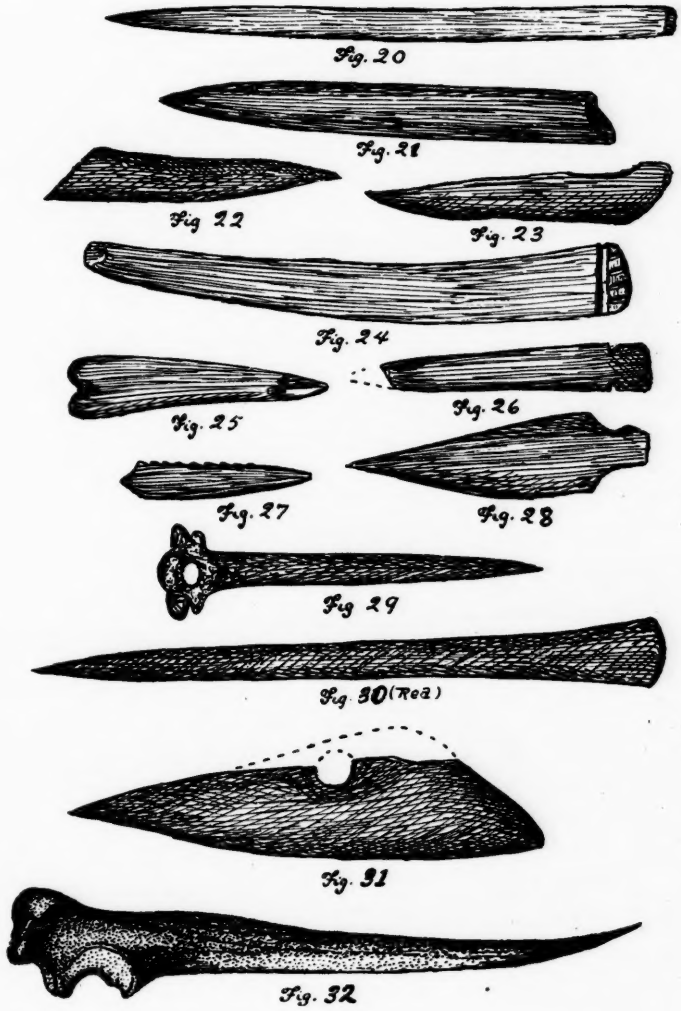


Fig. 10.



INCISED STONE PIPE [FIG. 6]

pet type" (Fig. 2) in the writer's collection when whole must have weighed nearly a pound. The bowl, which is at right angles to the stem, measures 3½ in. in height and 2 in. in diameter. The writer once saw a clay pipe of this type which had a stem no thicker than that of an ordinary white clay pipe used at the present day. Mr. J. D. McGuire is inclined to think that specimens of the trumpet form are copies of brass trumpets or cornets seen in the hands of the early French explorers. Fig. 3 shows a small clay pipe, undoubtedly an attempt made by a child, as the workmanship is very crude. A common type is represented in Fig. 4, although most of them are not so wide across the bowl. Up to the present time no anthropomorphic or zoömorphic forms have been met with by the writer. It is only among the pipes of the later Attiwandarons that these occur. A human face appears to be represented in Fig. 5, *a*, although the drawing does not bring this out very well. The nose and mouth at least are represented, and the fragment as viewed from the side looks somewhat like the cap of a Capuchin monk. A peculiar feature of this fragment are the remains of perforated lugs on either side of the head. These were perforated from side to side with a flint drill, as is evident from the striæ which remain. A very remarkable stone pipe is shown in Fig. 6. On the side where the stem hole is there is an incised figure of a cross, and above it, near the rim, is a wolf or some other animal. Below the latter figure there are two deep hollows. On the opposite side is a conventionalized figure of a man. One of the broad sides has a geometrical pattern, and the other bears a very interesting and well-exe-



DIFFERENT FORMS OF BONE AWLS

cuted representation of what is presumably the Attiwandaron thunder bird. There are even two pairs of lightning symbols—one on either side of the head—and there is another larger one near the tail. The pipe is made of an argillaceous stone.

The stone relics consist principally of celts or axes and chisels. These are usually made of a hard, black stone, but also very often of slate, and even limestone. They are of all sizes. The writer has a very small sandstone chisel which is a little over 5/8 in. in width at the cutting edge, 1½ in. long, and slightly more than ¼ in. thick. Hammer-stones, round or oval pebbles from 2 to 4 in. in diameter and with a pit on both of the flat sides, are very numerous on some camps. The pits no doubt are the result of continual abrasion, caused by cracking nuts or some similar operation. The deep peripheral abrasions on some specimens seem to indicate that they were used to block out the rougher forms of flint implements. A specimen is shown in Fig. 7. It is of sandstone, a material totally unfit for use as a hammer. The holes are smoothly rounded, and one side has two pits very close together. It is very difficult to say for what purpose this specimen could have been used. Chert arrowheads and scrapers, of which Figs. 8 to 13 represent typical specimens, are also fairly numerous. Scrapers, like the one represented in Fig. 12, are very plentiful. Fig. 13 is a notched specimen. Figs 14 to 17 represent chert perforators; Figs. 14 and 16 having their points much worn and polished from continual use.

Stone gorgets or tablets with two holes are sometimes found, but the most numerous stone ornaments are the small pendants, made by perforating round or oval pebbles for suspension (Figs. 18 and 19). Some have been found with rude pictographs or geometrical ornamentation on the sides.

Articles of native copper are very rare. A number of awls made of this metal were found on a village site near Wolverton, Ontario. They were about 5 in. long, nearly as thick as an ordinary lead-pencil and had a sharp point.

Awls or bodkins are the most common form of bone implement. They are of various lengths—from 2 to 7 in. Figs 20 to 32 represent different forms of bone awls collected by the writer. Notched specimens are shown in Figs. 26 and 28. Fig. 28 may have been used as an arrowhead. Fig. 32 is the ulnar bone (*os calcis*) of a wolf (?). Its ready adaptability to the purpose in question, and with no further preparation than the production of a sharper point, made this the favorite bone for awls. The articular end formed a very good handle. In Fig. 29 is shown an awl made from the dorsal spine of a large fish. A fragment of another spine is shown in Fig. 27, and this shows the teeth. It is hard to say for what purpose the broken specimen shown in Fig. 31 was used. It is almost too wide to have been used as a needle.

Figs. 33 and 34 show what are commonly called " tobacco stoppers," horn pins, etc. It has also been supposed that they were " used

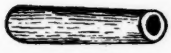


Fig. 35

Fig. 36

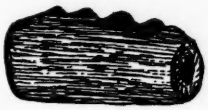


Fig. 37.

Fig. 38.

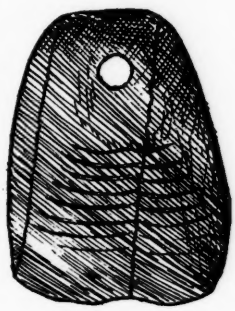


Fig. 45.

Fig. 44.

Fig. 47

Fig. 40

Fig. 41

Figs. 42 - 43.

Fig. 46.

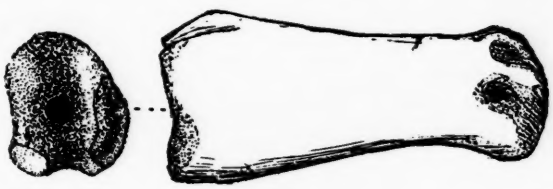


Fig. 39.

to fasten down skins to the ground for dressing purposes," or "as pins or buttons for fastening articles of clothing about the person."

Bone beads are quite numerous on nearly every village site. The cylindric beads are made chiefly from the radial bones of birds and the larger bones of the smaller mammals. Figs. 35 to 38 represent some of the latter kind. Fig. 38 is ornamented with incised lines. Many were made of the phalangial bones of the deer, the one shown in Fig. 39 being bored at both ends. Fig. 40 represents one which has been cut in two and perforated for suspension at the small end. This kind is very numerous. The one represented in Fig. 41 was cut from a deer's jaw bone—from the portion of the ramus between the premolar and incisor teeth. It is perforated from end to end. Few disk-shaped beads are met with—Figs. 42 and 43 show two found by the writer. A large, carved bone head is shown in Fig. 44. Very few similar carvings are found on the Attiwandaron village sites. The writer has a bead which is jet black and very highly polished. It may have been blackened by smearing with grease and holding over a flame, a process

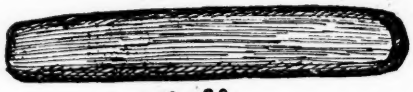


Fig. 33.

Fig. 34.

which Peter Kalm, the early Swedish traveler, tells us the later Indians used to blacken their tobacco pipes. There are some also which are of a grayish color, and these may have been colored in the same manner. Perforated fish vertebræ, undoubtedly used as beads, have also been discovered.

The canine teeth of the bear are frequently met with. They were evidently used for some purpose. Some have the root portion ground; others have a part of the enameled portion broken away, as in Fig. 47, and a few are perforated.

Bangles made of bone are rarely found. Fig. 45 represents one made from a portion of the carapace of the painted tortoise (*Chrysemys picta*). Another is shown in Fig. 46. It is imperfect. One side of the specimen bears a number of indentations arranged in 3 parallel rows. It is also made of a rib plate, probably that of *Chelydra serpentina*.

Shells were quite extensively used. The *unios* seem to have been a favorite material. The writer has found valves of the following species: *Unio gibbosus* (used as scrapers or for dressing hides), *U. ventricosus* (perforated for suspension as an ornament, and also used for

smoothing purposes) and a fragment of *Margaritana costata,* which had long been used as a scraper, being worn down nearly to the pallial impression. This may have been used as a " slick " for smoothing the inside of clay vessels while they were in the plastic state. Of shell beads there are only 3 kinds, the most common (Fig. 48) being one of our large fresh-water univalves (*Melantho decisa*), perforated near the lip for suspension. Another kind is made of a common form of spiral shell found in Lake Erie—*Pleurocera subulare*—(Fig. 49). The writer has also met with perforated specimens of *Goniobasis livescens,* another fresh-water shell. Several shells of *Marginella conoidinalis* (Fig. 50), a marine species, have been found. These had the apex ground down until a hole appeared.

W. J. WINTEMBERG.

TORONTO, CANADA.

Fig. 48.

Fig. 49.

Fig. 50.

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AN ANCIENT TABLET AT WUCHANG

IN the May issue of RECORDS OF THE PAST, 1903, the author, in an article on *Ancient Hankow,* refers to the engineering exploits of Yu Wong, who lived 2300 B. C. In connection with that hero, who more than any other marks the dividing point between history and legend, I have recently learned two facts which appear to me not unworthy of notice. There is a temple in honor of Yu Wong on the top of a hill overlooking Hankow and the adjacent cities. It stands in solitary grandeur, I might say, if there were anything grand about it except its commanding site. It is neither empty, swept nor garnished. It contains no important inscription, but it is itself a monument.

On the opposite side of the river, near the small Thibeton pagoda, and within the walls of Wuchang, there stands a stone which bears a famous inscription in commemoration of the labors of our Chinese Hercules. It is very ancient and its style of writing so antiquated that no scholar of the present day is able to decipher it with certainty. Some have contended that it was erected by the great engineer, or not long after his time. Others maintain, with more probability, that it is a fabrication, forged about 1,000 years later.

The question is discussed at length by Tegge in the first volume of his *Chinese Classics.* The inscription at Wuchang, a reproduction

of which accompanies this article, does not pretend to originality. It claims, in fact, that it is a replica of a monument on Mount Heng, in Hunan. Last summer my friend, Prof. Haenisch, of Berlin, visited the sacred spot with great fatigue, and made a report on the subject to an Oriental Institution in Berlin. That paper he kindly read in my hearing, and I can only say in this place that his investigations have finally settled the long-mooted question. The alleged monument is

ANCIENT TABLET AT WUCHANG

not genuine in any sense. But its high antiquity going back to about 1,000 B. C. makes it an object of reverence to Oriental pilgrims.

A conjectural rendering, if any be desired, may be found in Tegge's Shuking, above referred to. It throws no light on history, and it only remains to add that the strange hieroglyphics which produce such a fine effect were never in use for any purpose but that of ornamental writing.

W. A. P. MARTIN.

President of the University of Wuchang, China.

BOOK REVIEWS

THE JORDAN VALLEY AND PETRA*

THESE volumes represent the work of two men experienced in traveling and well versed in the historical side of the subjects treated. Enthusiastic, enjoying life for its own sake as well as for the opportunities for good it gives them, with open, impressionable minds, quick to observe beauty in nature and good in humanity, ready to meet hardship if necessary to carry their points, willing and able to spend money when money would open otherwise closed doors, the story of their journey over this rarely trodden route reads almost like fiction—so unexpected are its developmnts and so interesting its details. The difficulties are so great that only men of resource and determination could accomplish it successfully.

Their studies are especially interesting to the archæologist in a region where a succession of civilizations—Semitic, Greek, Roman, Christian, Mohammedan and Crusader—has each left its mark for the student to decipher, and no more fascinating field can be found to-day. Who would have supposed that Kerak in Moab possesses the finest Crusader ruin in the world? " The castle, built at the southern angle and highest point of the city, is a mass of vaulted rooms and chambers, more than 250 yards square and still reaching up four or five stones. . . . This fortress was built about 1311 A. D. . . . In 1183 it defied the assault of Saladin." Reynald of Chatillon disregarded the terms of the truce, issued forth, and " sacked one of the richest of the Damascus caravans " (vol. 1, pp. 340, 341). So the struggle went on until, on July 5, 1187, the Crusaders were finally defeated. " Reynald, King John of Jerusalem, and the Grand Master of the Templars were among the captives." Some of these massive ruins have been used as quarries by the present inhabitants, a wall 27 ft. thick furnishing stone for building much more easily gotten at than digging them out of the ground. In 1894 the Turkish Government captured the city, and they have erected a few new buildings. Should the government find it necessary to hold this garrison to secure the road to Mecca, the city will live on; if not, it will soon lose its importance as a strategic point.

In Madeba the archæologist finds some wonderful remains. In 1884 a Greek monk " wrote a letter to the Patriarch of Jerusalem, telling him of a mosaic pavement at Madeba, covered with the names of

*_The Jordan Valley and Petra_, by William Libbey, Sc. D., Professor of Physical Geography, Princeton University, and Franklin E. Hoskins, D.D., Syria Mission, Beirout, Syria. With 159 ilustrations. Two volumes. New York and London: G. P. Putnam's Sons. 1905. See advertising pages of RECORDS OF THE PAST.

cities, such as Jerusalem, Gaza, Nicopolis, Neapolis, etc." In 1890 the letter was found by a new Patriarch, who at once perceived that this was important, and "sent a master mason with orders that if the mosaic was a fine one to include it in the church which was to be built at Madeba for the use of the Greek population. The mosaic was at that time almost complete, and, by the testimony of those who saw it, contained the name of Smyrna. But the stupid builder, in his great desire to build on the ancient foundations, destroyed the greater part of it and drove a pilaster right through the priceless piece, that he did not completely destroy." (Vol. 1, pp. 264, 267.)

In 1897 Father Cleopas, the librarian of the Greek Patriarchate, brought back notes and sketches which deeply interested the archæological world. This map is described very fully, and all interested in such matters will be delighted with the author's explanations. He also gives Mr. Clermont Ganneau's suggestions as to the origin of the map and his reason for its existence. In fact, the food for thought suggested by these travels is overwhelming.

One of the strange facts in history is the way the Greeks and Romans made colonies of such size at such distances from home. Gadara represents one of these 10 cities of the Decapolis. The feat of carrying a chariot road up an ascent 2,000 ft. in height within a distance of 8 miles is a stupendous piece of engineering, and to have laid such blocks of basaltic rock speaks well for the skill and determination of the builders. The ruins of Gadara occupy a space more than 2 miles in circuit. One can see the grooves made by the iron wheels of the Roman chariots. The most imposing ruins are those of two theaters, showing that they brought their amusements with them when they occupied these heights. The city probably went down during the early years of the Moslem conquest. The Decapolis was a league of Greek cities formed to resist the various Semitic influences. Originally 10 in number, at one time it numbered 18 towers. These were probably all destroyed by the Moslems, and the inhabitants seem to have been exterminated. The wandering Arabs have come and gone through these cities. Earthquakes have occasionally visited them. Yet here, in this but rarely visited place, we have the most perfect example of a Grecian city in the world.

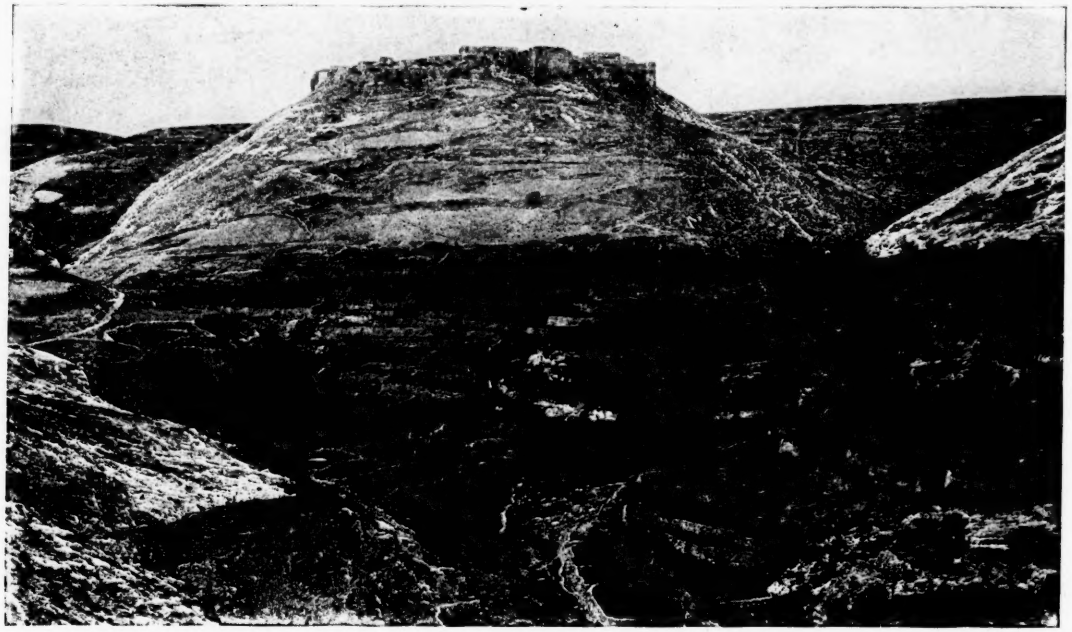
The readers of RECORDS OF THE PAST will recall an illustrated article on *Jerash** by this gifted writer, so that we need not dwell on it here.

An important chapter is devoted to Moab, and a translation of the "Moabite Stone" is given.

One at all interested in such subjects can scarcely leave off. Every page is full of interest, which is intensified by many illustrations.

The second volume takes us from Kerak to Petra, and from Petra back to the southern end of the Dead Sea, and through Hebron and Bethlehem to Jerusalem, with a side excursion to Jericho. While every step of the journey yielded something new and interesting to the

*RECORDS OF THE PAST, Vol. IV, Part II (Feb., 1905), pp. 35-47.



SHOBEK FROM THE EAST

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traveler, the climax is reached in Petra, where the authors remained much longer than any travelers have heretofore done, and collected a wealth of photographs that is fairly bewildering. We can best give an idea of the work accomplished by the authors by quoting liberally from their narrative.

There are two, if not three, roads between Shobek and Petra. We chose the easterly one in going and a more westerly one in returning. We struck camp and were on the march at 8 A. M. Because we no longer had the telegraph-poles to guide the muleteers, and because we were acting as our own guides, we kept our baggage train in sight all day. Our camp in Shobek was south of the fortress, and our barometer registered 4,700 ft. We climbed out of the valley by a road bearing east, and in 15 minutes were on the plateau, level with the fortress. Ten minutes later we crossed the water-course, and, leaving the mill about 300 yards to the left, pulled slowly up a low ridge and across two small valleys, our road rising gently all the way. About 9.30 we left the main road and turned up a slope, reaching Bir Kadaa at 10.15. Then we went due south, through a long, narrow valley, up which ran an easy road to the crest, where the barometers marked 5,750 ft., or more than 1,000 ft. higher than Shobek. Crossing this watershed, we dropped into another narrow valley filled with butm trees and carpeted with fresh, green grass. Here and there we saw traces of bears' claws, where these animals had searched for acorns after the snows had melted away. Beyond another hillside, which showed ruins of some sort, we crossed a ridge, went down a steep slope, and, at 11.40, joined the main road again, which had made a long swing around the mountains to the west of our higher route. After 20 minutes we reached a fine spring among extensive ruins, and sat down for a good luncheon. Our barometers here stood at 5,400 ft., and a few minutes beyond rose again close to 5,700 ft. Here we found ourselves on the back of a ridge, with a wide view east and west. Then, for a distance of 3 or 4 miles, we followed the best bit of Roman road we had ever seen. It was almost unbroken, and showed exactly what it was 1,800 or 2,000 years ago. It was made of basalt blocks, at either side a fence-like row protruding above the ground like a border. The street within was triple; there was a road in the center, paved with large blocks, and two paved ways on either side. These side roads sloped each way from the central dividing line of big blocks to the fence-like rows on either side. The way this road swung around the mountain tops and over ravines, disdainful of every difficulty, holding steadily to its course southward, was grandly impressive. We thought of the days when a Roman chariot and its proud war horses could have traveled from these lonely mountain tops of Edom, up through Asia Minor, over the Hellespont through Europe, and hard up to the borders of Scotland, on just such roads as this. No power but Rome ever held Eastern Palestine secure against the desert, and her roads and bridges are still an enduring monument to her greatness [vol. II, pp. 35-37].

After all we had read and studied, we had failed to realize that the entrance to Petra from the north was a descent, a downhill road, into the heart of the great rocky mountain, and not an ascent, up some rocky ravine, into an eagle's nest of a city.

The original founder of this stronghold, we now began to realize, must have been a strategist of no mean powers—a man who was not afraid to break away from precedent and do an original act.

Most fortified spots in the world's history have been elevations, because men chose to co-operate with nature in making her almost inaccessible places

perfectly safe resorts by their ingenuity and skill. We had seen many such places from the beginning of the trip until now. Here, however, was a hole in the ground, as it were, which had proven just as efficient protection to its inhabitants as a hilltop could be. What a splendid location it was, and how thoroughly guarded by nature, will appear as we proceed. From our standpoint we could only make out that somewhere, out in the central portion of this tangled and badly eroded mass, there was a depression, deep enough for its surrounding natural-walls to hide its bottom from view. A simple inspection of the surface of the sandstone was sufficient to deter us from attempting to cross it, as a more uneven, ragged mass is hard to imagine. It seemed as though, not content with its ordinary work, erosion had produced enormous pinnacles and cut deep fissures beside them, until the natural *chevaux-de-frise* forbade all access from the foot of the limestone walls to the edge of the depression, which was about two miles away. The following sketch will give a diagrammatic idea of the region, as it would look from the direction of the Arabah in a bird's-eye view.

We had been journeying along a limestone ridge, with here and there an outcrop of basalt or flint, from which the Romans built their splendid road. And now we came to the southern edge of the limestone formation, with a cliff-like slope of 1,000 ft., and were looking down into an ancient geological bay, which nature had filled with the matchless mass of many-hued sandstone.

This bay, in the eastern side of the great Jordan depression, immediately attracted our attention. It was almost semi-circular in form, being about 20 miles in length, north and south, and about 12 or 15 from east to west at its widest portion [pp. 38-42].

Petra, the Rock City, has been to these regions and these peoples what Rome was to the Romans and Jerusalem to the Jews. Horites, Edomites, Nabatheans and Romans have all rejoiced and boasted in the possession of this unique stronghold and most remarkable city of antiquity. If the name " Horites " refers, as many have contended, to the fact that its owners were " cave " or " rock dwellers," and was derived from their mode of life in Mount Seir, then there can be little doubt but that what we know as Petra was one of their earliest homes and strongholds. Even if we can never find a trace of the Horites themselves, the natural features of the locality, the brook and stronghold, like the Nile in Egypt, prove it to be the natural dwelling-place of man. There is no other location in all the Land of Seir that can be reckoned a rival to it [p. 64].

It was, most probably, in the days of the Nabatheans that Petra became the central point to which the caravans from the interior of Arabia, Persia and India came laden with all the precious commodities of the East, and from which these commodities were distributed through Egypt, Palestine and Syria, and all the countries bordering on the Mediterranean, for even Tyre and Sidon derived many of their precious wares and dyes from Petra. It was, at that time, the Suez of this part of the world, the place where the East and West met to trade and barter. It was also, in fact, a great " safe deposit," into which the great caravans poured, after the vicissitudes and dangers of the desert. Its wealth became fabulous, and it is not without some good reason that the first rock structure one sees in Petra, guarding the mysterious entrance, is still called " Pharaoh's Treasury." It must have been the Nabatheans who developed the natural beauties of the situation and increased the rock-cut dwellings and tombs to the almost interminable extent in which they are found today [p. 65].

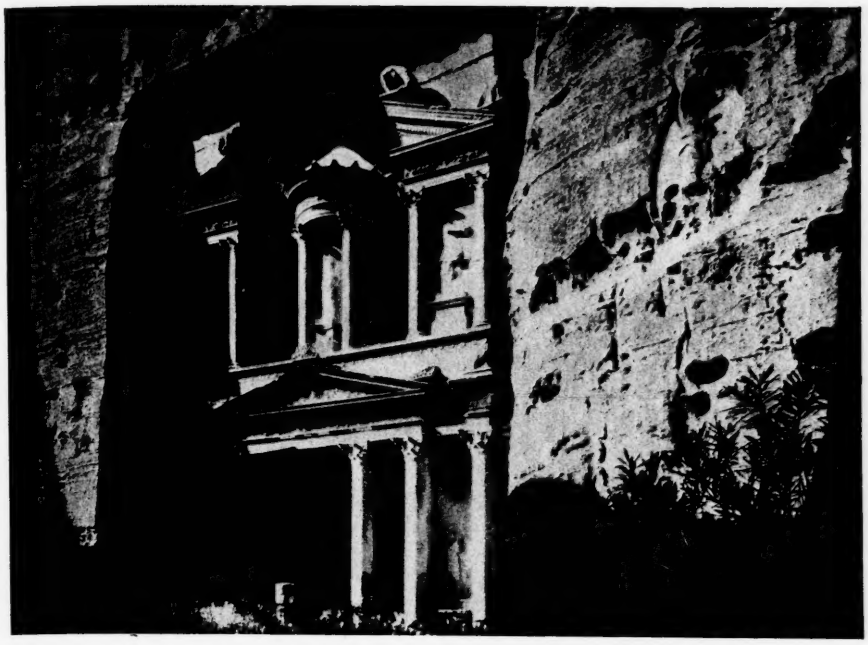
When we awoke on March 1 it was raining soft showers on our tents, but by 7.45 A. M. the clouds broke away, and by 9 o'clock our whole caravan was in motion, and they passed with difficulty among the oleanders as we approached the narrow defile. The day before we had entered on foot, and in our pleasurable excitement had paid little attention to the pools of water, the heaps of débris left by the winter floods in the narrow gorge, the masses of oleander and wild fig trees, which almost closed the defile at points, but when we attempted to ride through and lead our heavily laden mules, with their bulky loads of tents and canteen, we found it no easy task, and realized the wisdom of having camped outside on our arrival. At a dozen places along the defile we saw the muddy line of the winter floods which, dammed by heaps of rocks and stones caught by the trees and bushes, had risen 10, 15 and 20 ft. up the sides of the gorge before the temporary barrier had given way and allowed the imprisoned waters to rush onward. It was easy to imagine that a sudden heavy shower in the winter months might close this exit to any who might be camping inside. We had been assured at many points of our journey that we could not get our loaded animals through the gorge; but by rolling boulders out of the way, filling in pools here and there, paying no attention to the tearing of tent wrappings and the banging of our canteen and other boxes against the rocks, we succeeded in getting all the caravan safely as far as the "Treasury of Pharaoh," and then paid no attention to them, for beyond that all was easy.

Having the whole day before us for the short distance and the setting up of our camp, we moved leisurely, using the cameras more frequently than ever, and endeavored to verify many of the statements of preceding travelers.

The length of the Sik, or defile, not all of which is seen on Laborde's plan, has been variously estimated, but after passing through it 3 times and timing our passage, it is safe to say that from the fallen arch to the Treasury of Pharaoh—which is the real Sik—it is about 1½ miles long, or about 20 minutes' walk. If we add another 10 minutes from the Treasury to the Amphitheater, which marks the beginning of the city, then the defile is 2 miles long. It would require much time to plot it accurately, but the general contour is a wide semi-circular swing from the right to the left, with innumerable short bends, having sharp curves and corners in its general course.

The width of the Sik varies from 12 ft. at its narrowest point to 35 or 40 in other places. Where the gloomy walls actually overhang the roadway, and almost shut out the blue ribbon of sky, it seems narrower; and perhaps at many places above the stream the walls do come closer than 12 ft. Photographs of these narrower and darker portions of the defile are impossible. Only where the walls recede, and one side catches the sunlight, was it possible to secure any views that would reveal the actual beauties of the place. Then no camera could be arranged to take in the whole height of the canyon.

Travelers have estimated the height of these perpendicular side cliffs to be from 200 to 1,000 ft. Heights, like distances, in this clear desert air, are deceptive, but after many tests and observations we are prepared to say that at places they are almost sheer for 300 to 400 ft. This represents the canyon proper, for the rounded upper portions do not cut much figure under the circumstances. The face of the cliff at Pharaoh's Treasury must be well up to 200 ft. in height, and the masses above the Sik generally are higher, as we saw clearly from the High Place, which is nearly 400 ft. above the floor of the valley in front of the Treasury. The "View from inside Pharaoh's Treasury," of the Sik, gives an excellent idea of the opening as seen by one going



THE TREASURY FROM THE NORTH
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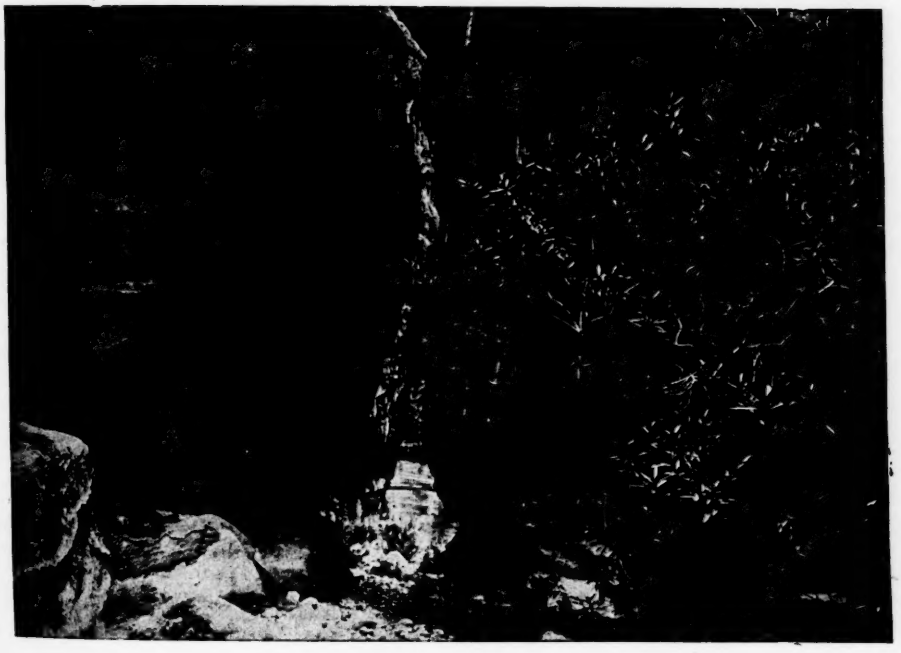


GORGE OF THE SIK
Reproduced by the courtesy of G. P. Putnam's Sons.

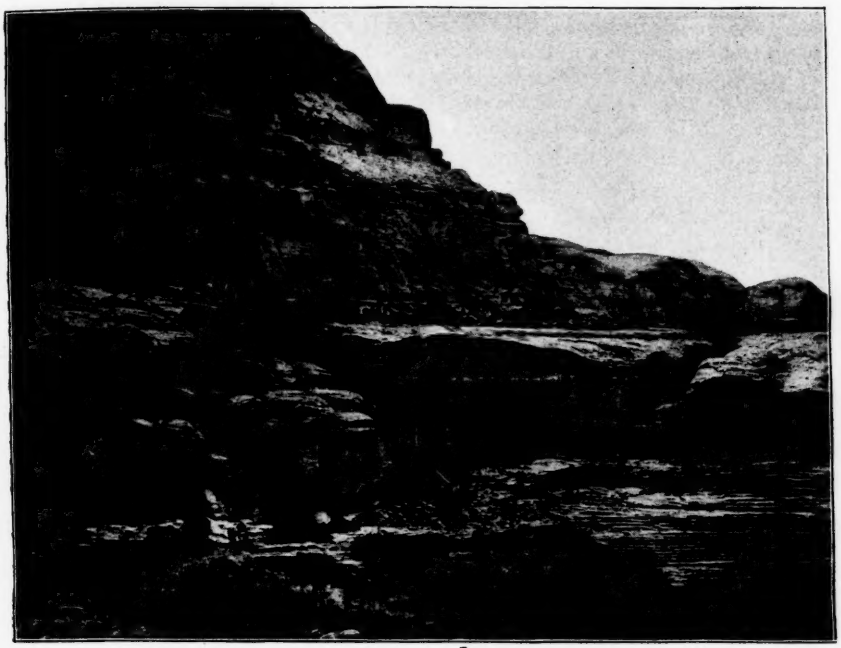
out of the city, though here also the camera fails to get in the full height. The visible portion of the cleft is fully 100 ft. high.

The floor of the Sik was once paved from end to end with huge blocks of stone about 18 in. square. These appear *in situ* at several points, and are covered by débris at others, but in the narrower portions the scouring of the winter floods has torn them all away. Stephens in 1837 entered Petra from the south over the rocky rampart, and when he came to the Treasury he saw a full stream of water gushing through the narrow entrance and filling up the whole mouth of the Sik. With difficulty he forded this, at times on the shoulders of his guide, and made his way into the defile for a short distance. How the ancients managed these storm-bursts cannot now be told, but the waters of the fountains in the valleys above were all lifted out of the floor of this gorge and carried along either side of the ravine in aqueducts, cut from soft sandstone, which are still in evidence at a hundred places. On the right side of the defile are the remains of a more modern aqueduct, which is plainly Roman. A clay pipe about 8 in. in diameter was let into the face of the cliff and secured by Roman cement. So strong and durable was this cement that even to-day the pipe is detached with difficulty. While the floor of the valley dropped lower and lower, the pipe rose higher and higher above the roadway, bending with every turn of the sloping walls, and below the Treasury it was led around the face of tombs and temples, in and out of rocky ravines, and ultimately it emptied its waters somewhere in front of the Corinthian tomb, fully 2 miles away from the point where it received its supply from the brook. It is plain, therefore, that the waters of the Fountain of Moses were led carefully into the city itself, and not allowed to be polluted and lost in the floor of the defile and valley below. In all our later explorations we saw abundant evidence of the existence of running water all about the city.

The structure of this pipe and its method of jointing were so interesting from an engineering standpoint that it is worth mentioning, as our best modern ideas on such matters are scarcely an advance upon this old piece of work. The sections of the pipe were about 18 or 20 in. long, and had double spigot ends. They were made of a fine-grained clay, and probably formed in a wicker mould, with the hand, by placing ring after ring of a continuous spiral of clay inside the mold, and then roughly smoothing the inner surface and pressing the rings together. This produced a series of slight riffles on the inside, which were reproduced in the formation of the calcareous deposit with which the inside of the pipe has become encrusted. The thickness of the clay did not vary much from ¼ in. at any place in the pipe, and all those sections which we could examine were carefully made and as carefully fire-baked. The pipes were joined together with a double sleeve, one outside and the other inside, which must have been put on the pipes in halves, the inner one being placed in position through the end of the pipe after the outer one had been secured in place.

While this method of construction undoubtedly constricted the lumen of the pipe, a very strong and secure key-joint was the result, which made it most difficult to break, even after all these years.

The constriction produced by the inner collar may also explain the regular and even coating of deposit from this hard water, which is practically uniform in thickness on all portions of the interior of the pipe, and is thicker and many times stronger than the pipe itself. The deposit was not as thick on the collar itself as on the pipe between the collars, a result probably produced by the retardation of the current of water [pp. 70-87].



FIRST VIEW OF PETRA FROM THE AMPHITHEATER.
From photograph by Prof. William Libbey.

Some travelers have expressed themselves as disappointed with the number of excavations visible from any one point, and even Dean Stanley wrote: "I had expected to be surrounded by rocks honeycombed with caves, but in the most populous part that I could select I could not number in one view more than 50, and generally fewer." But, like so many other travelers, Stanley camped somewhere south of Petra, entered in the forenoon, passed through the amphitheater, and out again the same day. But even in that case he must have passed the eastern wall, where for 1,000 ft. or more the face of the cliff to a height of 300 ft. was once completely honeycombed with these tombs. Exposed to the storms from the south and west, the decay has been very great, but even now it contains a marvelous amount of excavation. And the view at the end of the Sik and of tombs near the inner entrance will show clearly that Dean Stanley was napping when he wrote that sentence. Add to this the fact that a camera at most takes in an angle of 30 to 60 degrees, and we see that an observer at any of the three points mentioned above could count hundreds of excavations. Furthermore, a glance at Laborde's plan and the red dotting in the various fissures and ravines will recall the fact already referred to, that these ramifications are almost numberless, and that here abound excavations interminable. These excavations are not always "caves," but roads and stairways, platforms, tombs, dwellings and temples, many of which no modern traveler has yet seen, and which no man has ever counted. Thousands are now inaccessible, because the approaches have been weathered or washd away. Thousands more are filled or covered with débris. After 5 days inside the city we are prepared to say that a man might spend a month in attempting, and then

fail, to visit and examine all the rock-cuttings in the valley. Their number and extent can no more be determined by a glance from the floor of the valley than the streets and houses of a great city can be enumerated by one taking a hasty view from the public square [pp. 136-139].

Opposite the Deir [monastery near the exit] once stood a peak about 100 ft. high, and in its face, toward the plaza, stood a most elaborate temple. The bases of columns still mark the portico in front, and behind them are the remains of the great inner rooms, which extended back into the solid rock. It was a massive structure, larger than the Deir itself. Above this temple, on the top of the peak, are the ruins of what was once a large tower. From this exalted spot the views are superb in every direction, except where one mountain mass cuts off the region of the Dead Sea.

There is not a rock or a cliff within 1,000 ft. of this plaza which does not show the traces of human handiwork. Doors and windows abound, indicating the existence of rooms behind them, and stairways in all stages of ruin run up and down in every direction. A number of rocks have been cut into huge cubes, and their upper surfaces lead one to think that they were once surrounded by the familiar pyramidal masses. Other detached rocks are encircled with stairways, making one suspect the existence of small "high places." We climbed several and found cuttings that suggested pools and even altars, but the lack of time and the want of ropes and ladders made a careful examination impossible. We carried away the impression that somewhere in this region will be found another high place to match, perhaps to surpass, that in the city itself. The one isolated rock, which seemed to exhibit the closest resemblance to the remains of platform, pool, altar and drainage, looks down the magnificent gorge into the city, in just the same manner as the other High Place commands a view of the city. It is also probable that the higher masses behind the Deir may yield up some new treasures for the Biblical archæologist. We thought that we could see the decayed bases of two pillars, with traces of carving about them, but were not able to climb up to them.

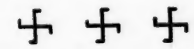
As we reviewed the whole conception of that rocky stairway, mounting 700 ft. from the brook, penetrating into the heart of the mountain, following the windings of the fantastic gorge, crossing every stratum of the many-hued sandstone; the steps, now yellow, now red, now banded, now white, now waving like a banner in the wind; the sides of the roadway adorned with seats and pools, and tablets and shrines; the smaller fissures filled with stairways leading into nooks unseen and unsuspected; the deep cuttings undertaken wherever the precipice left a space for a human foot; then this plaza surrounded by the wildest beauties of nature and the most wonderful structures; the views down the gorge into the city; over the whole Petra mass, over the chasms to Mount Hor and Aaron's tomb, and down the Arabah—it seemed to us that the combination is certainly one that no other city on earth can easily equal. And again and again we were forced to recognize the superior genius of the spirits and men who saw the possibilities of the situation, and added to nature the charms of art [pp. 223-227].

Much light is also shed by our authors upon the southwestern shore of the Dead Sea, occupied by Jebel Usdun, which they describe as a "mountain about 4 miles long and at places 700 or 800 ft. high. The lower 200 or 300 ft. of this height is a mass of solid rock salt,

whose upper level is easily traced by the wet line caused by the constant collection of moisture by the salt " [p. 304].

But the reader must be referred to the volumes themselves to obtain any proper comprehension of the interest of every sort gathered about the journey. Incidents of travel of every description are woven into the narrative to gratify the curiosity of the general reader, while no point of scientific or archælogical interest is omitted, and the volumes are illustrated more plentifully with photographs than has ever been done before.

G. F. W.



THE TABERNACLE: ITS HISTORY AND STRUCTURE*

THIS BOOK, with the discovery it claims, is really the archæological sensation of the season. The discovery of the true Biblical cubit and the whole system of tables of Semitic long measure is not calculated to excite curiosity so much as the uncovering of the Temple of Bel in Babylonia or the recovery of a royal mummy in Egypt, yet the practical application of Mr. Caldecott's discovery, if it shall be made good, is of incalculably more importance to history and art and architecture and religious symbolism than the finding of a storehouse of the gods.

The pre-eminence of the book lies in this discovery, though the same indomitable patience and keen insight that enabled him to make the discovery is manifest in the application of it to the history and structure of the Tabernacle, so that this part also of the book contains many surprises in the skill of putting things together. Though both the discovery the book announces and the application it makes of it must stand the ordeal of criticism of the Assyriologists on the one hand, and the Biblical critics and Typoligists and model-makers on the other, the cordial introduction of Prof. Sayce creates a favorable presumption in both instances.

The author presents what purports to be the true Biblical cubit and the correct tables of long measure in use among the Semitic people, basing his conclusions upon a critical study, a scientific restoration and a complete translation of the famous Senkereh tablet and an illucidation of the scarcely less famous Scale of Gudea. The claim of the author is startling, for the greatest assyriologists of the world had labored with only partial success on both these relics of antiquity. Moreover, it is revolutionary, for whereas Biblical students have heretofore consoled themselves with the thought that, if they did not know exactly the length of the Biblical cubit, it did not matter much, for the proportions would be right in any case. But he has shown that the Semite had 3 cubits related to each other, as 3, 4 and 5, just as interna-

*_The Tabernacle: Its History and Structure,_ by Rev. W. Shaw Caldecott. With a preface by Rev. A. H. Sayce, D. D., LL. D. 12mo. Cloth. $1.75 net. The Union Press, 1122 Chestnut street, Philadelphia. 1905.

tional commerce to-day has 3 ells related to each other as 3, 5 and 6, and thus the proportions in Biblical measurements have not been right. If his work stands the final test, then there is not a model or a picture of the tabernacle or of the temple that is fit for any place but the cellar or the attic, and much that has been written in the illustration of these sacred structures must go along with the models.

It is pleasant to be able to say that Mr. Caldecott's work carries with it immediately a large measure of conviction.

M. G. KYLE.

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EDITORIAL NOTES

DR. WRIGHT'S EXPEDITION:—After spending several weeks in England the Editor sailed from Leith, on August 31, for Copenhagen, from whence he will go into Russia, spending considerable time in the southern part of the Empire, in the Caucasus and the Crimea. To facilitate his work in this region the Russian Embassy at Washington has given him letters of introduction to the Viceroy of the Caucasus, Warrantsow Dashkow, and to the Governor of the Province of Touris, Mr. Trekoff.

ANCIENT BABYLONIAN DRAINAGE:—Dr. Banks, in a recent article in *The Scientific American*, calls attention to the remarkable system of drainage to be found in the ancient cities of Babylonia, a region difficult to drain because of the flatness of the country and the loose, sandy character of the sub-soil. One of the tiles from the ruins of Bismya which was used to conduct off rain water, and which dates back to about 2750 B. C., was in such a good state of preservation that it was used by the excavators as a chimney to their house. These tile drains were sunk sometimes as much as 14 meters into the ground, where the water, escaping through perforated tiles, was absorbed by the loose sand.

ZANE'S CAVE:—Some 6 miles southwest of Seneca, Mo., in the Wyandotte Reserve, Indian Territory, is a large rock-shelter and cave known as Zane's Cave. The cliff, an uplift of St. Joe limestone, capped by several strata of shale, is some 70 ft. high and about 200 ft. long, facing the south. A stream of cold, clear water flows from the west end of the cavern, whilst the eastern half of the shelter is largely filled by rock-falls, ashes and other débris, in which, however, by excavation, I have discovered a typical deposit of flints, bones and other evidence sufficient to prove the shelter to have once been the home of Cave Man. The roof of the shelter is some 20 ft. high. Skirting the shelter is a great camp site covering about 10 acres, but the flint implements and mills found here, though many of them show great age, are mostly of a higher type than those found at the shelter. Nevertheless, the shelter may also have been occupied contemporaneous with this camp by these later people.—[W. C. BARNARD, M. D., Seneca, Mo.]